

[REDACTED]
The Scottish Salmon Company
1 Smithy Lane
Lochgilphead
Argyll
PA31 8TA
[REDACTED]

FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS No	FB0169	DATE OF VISIT	27/06/2019
SITE No	FS1315	SITE NAME	Maaey
INSPECTOR	[REDACTED]	CASE No	20190303

Section 1: Summary

An unannounced inspection was carried out at the above site following reports of increased mortality. During the inspection of the site a number of moribund and lethargic fish were observed in all cages across the site. Five moribund fish were removed for further examination and subsequent sampling.

Histopathology examination revealed a nodular growth resembling a neoplasia-like structure in the gill of F1, mild peritonitis and mild cardiomyopathy potentially associated with salmonid alpha virus (SAV), the causative agent of pancreas disease (PD). SAV was confirmed by QPCR.

QPCR testing was positive for infectious pancreatic necrosis virus (IPNV). However histopathology results were not consistent with IPN pathology.

Aeromonas sp. was isolated by bacteriological testing, however the mixed nature of growth would not suggest it is the primary source of morbidity.

Please contact myself or the duty inspector should you require any further information, have any queries regarding this report or if any problems develop.

Section 2: Case Detail

Observations

During the inspection of the cages on site a number of moribund and lethargic fish were observed with a proportion of these fish appearing anorexic. Five fish were removed for further examination and subsequent diagnostic sampling, of these fish all five were moribund with F1 and F2 hanging vertically in the water column.

The site had been experiencing recent increased mortality, records showed mortality of 5.43%, 13.84%, 7.38% and 7.79% for the previous four weeks respectively. The increased mortality has been attributed to PD, exacerbated by the handling of fish during recent treatments.

External examination showed haemorrhaging of the ventrum of F2-5, with those fish also appearing anorexic. A lesion was observed on the flank of F4. The lice load of the fish was between 5 – 15 (all stages).

Internal examination showed mild petechial haemorrhaging of the liver in F3, a lack of fat was observed on the pyloric caeca of F2-5. The spleen appeared enlarged in F3-5, with granulomas present in the spleen and kidney of F3-4. Yellow pseudo faeces were present in the gut of all five fish.

Samples

Samples were collected from five fish according to the table below:

Fish number	Pool number	Facility number	Species	Stage	Origin
1-5	1	11	Atlantic salmon	~2 kg 2018 S1	North Uiskevagh

Results

Bacteriology: Kidney, gill and lesion material from F1-5 were inoculated onto appropriate media for the isolation of bacteria.

The following bacteria were isolated:

Aeromonas sp. – kidney (F2-5), gill (F1-5) and lesion (F4)

Vibrio sp. – kidney (F2, F5) and gill (F2, F3)

Virology: Tissue samples were tested for segments of nucleic acid indicative of the presence of the pathogens specified below using real-time PCR (QPCR).

Salmonid alphavirus (SAV)

Pool Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
P1	16.15	36.92	36.76	37.46	POSITIVE

Infectious pancreatic necrosis virus (IPNV)

Pool Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
P1	17.07	20.57	19.82	20.30	POSITIVE

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious salmon anaemia virus (ISAV), viral haemorrhagic septicemia virus (VHSV) and piscine myocarditis virus (PMCV)

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from F1-5. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: F1 showed a nodular tissue growth with tissue resembling cartilage at the centre. This cartilage-like tissue is surrounded by fibrous tissue and likely newly formed vessels. The most external layer resembles epithelial stratification. F2 and F3 showed two small foci of lamellar adhesions and two lamellar thrombi.

Skin & Muscle: Few scattered skeletal white fibres showing a pale H&E stain (F2) and some skeletal red fibres showing increase in eosinophilia (F4).

Heart: Mild pericarditis (F1, F3, F5). Several nests of inflammatory cell infiltration (F1, F3) and small foci of myocardial fibre degeneration at the compact spongy layer junction (F3), some endocardial thickness noted in atrium (F2).

Gut and pyloric caeca: Few fibrous adhesions associated with vaccine administration noted in F1, F2, F3 & F4.

Pancreas: Within normal range.

Liver: Mild multifocal diffuse hepatic vacuolation (macroviscules) (F5).

Kidney: Within normal range.

Spleen: Within normal range.

Signed:



Fish Health Inspector

Date: 25/07/2019

The Fish Health Inspectorate Service Charter detailing standards of service is available on the Marine Scotland website at www.gov.scot/Topics/marine/Fish-Shellfish/FHI/charter

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FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS No	FB0169	DATE OF VISIT	27/06/2019
SITE No	FS1315	SITE NAME	Maaey
INSPECTOR	[REDACTED]	CASE No	20190303

The fish health inspectorate accompanied an inspector from the Animal and Plant Health Agency during an unannounced visit to the above site.

All epidemiological units were inspected. Samples were taken for diagnostic purposes. A separate report will be issued detailing the results of these tests.

Records

Aquaculture animal and aquaculture animal product movement records were inspected and appeared to be adequately maintained.

Mortality records were inspected and found to be adequately maintained.

Mortality levels had exceeded the reporting criteria since the last inspection and had been reported to the Fish Health Inspectorate as required.

Reports detailing the results of animal health surveillance carried out by or on behalf of the business and/or Marine Scotland were available for inspection.

Inspection under the Animals and Animal Products (Examination for Residues and Maximum Residue Limits) (England and Scotland) Regulations 2015

Medicine records were inspected and found to be adequately maintained.

Samples were taken to be analysed for veterinary residues.

Inspection under the Aquaculture and Fisheries (Scotland) Act 2007

The site was also inspected in accordance with the Aquaculture and Fisheries (Scotland) Act 2007, as amended, with respect to section 3 regarding parasites (sea lice).

R10

On this occasion recommendations were issued in relation to parasites (sea lice):

- A record must be maintained of the reason for not conducting a weekly count of parasites in the event that such a count is not undertaken in any week.

Please ensure that these points have been addressed by 30/08/2019. Records or documentation demonstrating that these points have been addressed should be sent to the Fish Health Inspectorate (contact details below). The site may be subject to further inspection or enforcement action should the appropriate action regarding the above points not be taken within the time period stipulated.

Please contact myself or the duty inspector should you require any further information or have any queries regarding this report.

Signed:



Date: 24/07/2019

Fish Health Inspector

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BUSINESS No	FB0169	DATE OF VISIT	27/06/2019
SITE No	FS1315	SITE NAME	Maaey
INSPECTOR	[REDACTED]	CASE No	20190303

Case completion report

Recommendations in relation to the above case were made for implementation by 30/08/2019. Following submission of the required documentation, evidence has now been provided to Marine Scotland to demonstrate that the recommendations have been implemented.

This case will now be closed. This site may be subject to further audit and recommendations in the future.

Please contact myself or the duty inspector should you require any further information or have any queries regarding this report.

Signed:



Fish Health Inspector

Date: 16/09/2019

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F1 – F2



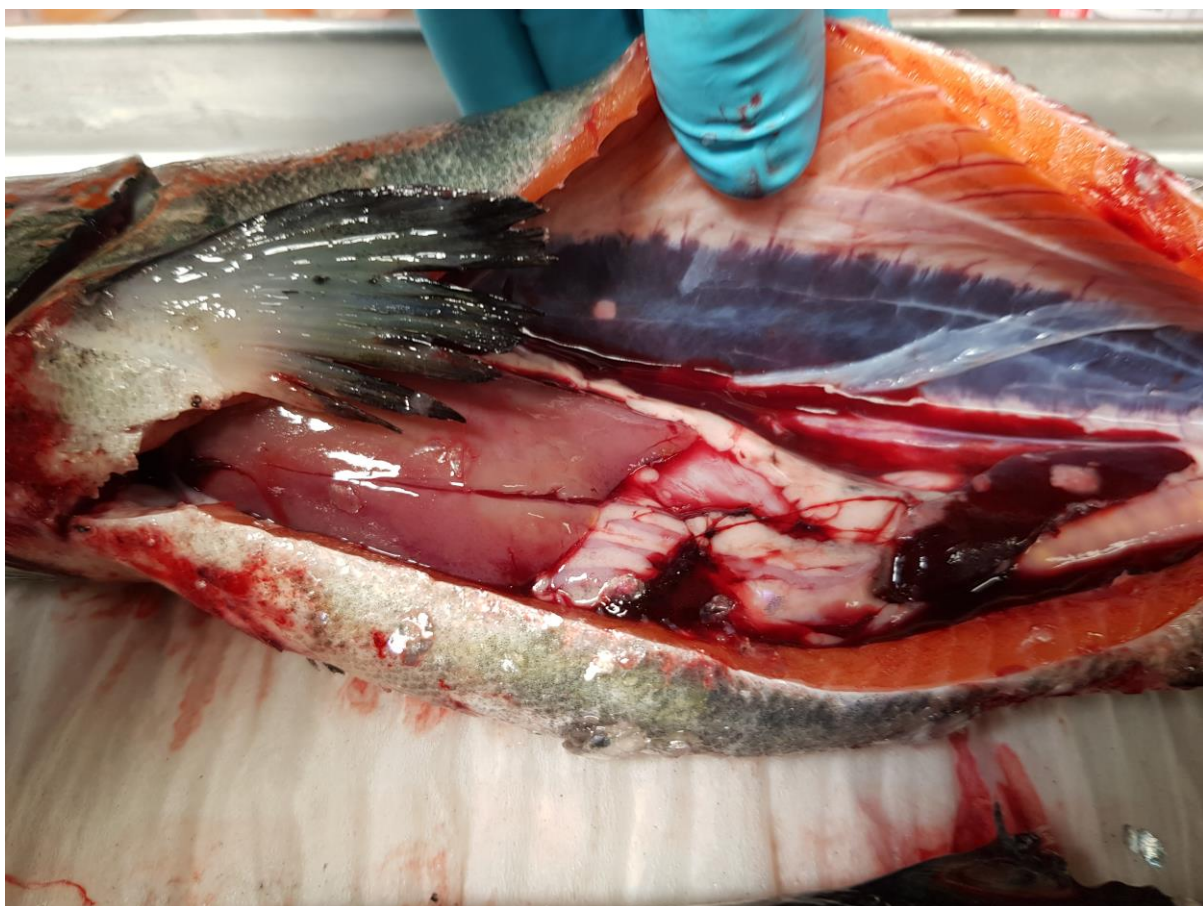
F3, F4, F5



F1



F2



F3



F4



F5

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FISH HEALTH INSPECTORATE VISIT REPORT

SUMMARY FOR INFORMATION OF SITE OPERATOR

BUSINESS No	FB0169	DATE OF VISIT	27/06/2019
SITE No	FS1304	SITE NAME	Maragay Mor
INSPECTOR	[REDACTED]	CASE No	20190304

Section 1: Summary

An unannounced inspection was carried out at the above site following reports of increased mortality. During the inspection of the site a number of lethargic fish with evidence of white heads were observed in cage 6. Five fish were removed for further examination and subsequent sampling.

Histopathology examination revealed mild multifocal proliferative pathology in the gills, presence of epitheliocystis and a few amoebic cells suggestive of mild amoebic gill disease (AGD). Splenic and hepatic necrosis was also noted. Examination also showed tissue alterations resembling pancreas disease (PD). QPCR testing confirmed the presence of salmonid alphavirus (SAV), the causative agent of pancreas disease.

Sample tested positive by QPCR for infectious pancreatic necrosis virus (IPNV). However histopathology results were not consistent with IPN pathology.

QPCR testing was positive for infectious pancreatic necrosis virus (IPNV). However histopathology results were not consistent with IPN pathology.

Aeromonas sp. was isolated, however the level and mixed nature of growth would not suggest to be the primary source of morbidity.

Please contact myself or the duty inspector should you require any further information, have any queries regarding this report or if any problems develop.

Section 2: Case Detail

Observations

During inspection of the cages on site a number of lethargic fish were observed in cage 6. Five fish were removed for further examination and subsequent diagnostic sampling.

Mortality had increased the previous week, with a mortality level of 1.75% across site attributed to post-treatment losses.

External examination showed haemorrhaging of the ventrum on F1, F2, F4 and F5. F5 also had evidence of haemorrhaging at the base of its fins and physical damage on the flank. Gills were slightly pale in all fish. The lice load on the fish were between 9 -13 (all stages).

Internal examination showed petechial haemorrhaging in the liver of F2-5. The heart of F3 appeared deformed. F5 showed a lack of fat on the pyloric caeca and an enlarged spleen.

Samples

Samples were collected from five fish according to the table below:

Fish number	Pool number	Facility number	Species	Stage	Origin
1-5	1	6	Atlantic salmon	~3.5 kg 2018 S1	Russel Burn

Results

Bacteriology: Kidney and gill material from F1-5 were inoculated onto appropriate media for the isolation of bacteria.

The following bacteria were isolated:

Aeromonas sp. – kidney (F2, F5), gill (F1-4)

Virology: Tissue samples were tested for segments of nucleic acid indicative of the presence of the pathogens specified below using real-time PCR (QPCR).

Salmonid alphavirus (SAV)

Pool Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
P1	17.08	31.29	31.67	31.56	POSITIVE

Infectious pancreatic necrosis virus (IPNV)

Pool Number	Endogenous control Cp value	Cp Values			Reported Result (PCR)
P1	17.31	25.30	25.46	25.64	POSITIVE

The samples tested negative for infectious haematopoietic necrosis virus (IHNV), infectious salmon anaemia virus (ISAV) and viral haemorrhagic septicemia virus (VHSV).

Histology: Tissue samples of gill, skin and skeletal muscle, heart, pyloric caeca, pancreas, hind gut, liver, spleen and kidney were taken from F1-5. The tissue samples were fixed in 10% neutral buffered formalin.

Histopathological examination revealed the following:

Gill: Very mild multifocal interlamellar hyperplasia and lamellar fusion (F1 & F4). Few amoebic cells resembling *Neoparamoeba perurans* were noted in F1 & F4. Few numbers of basophilic epithelial inclusions (likely epitheliocystis) noted in F3 & F4 and several scattered aneurysmal dilation/telangiectasia and lamellar thrombi. Generalised lamellar epithelial lifting noted in all fish (likely post mortem artefacts).

Skin & Muscle: Small foci of inflammatory cell infiltration and fibrosis noted in skeletal red muscle (F1, F2, F3 & F4) and white muscle (F4).

Heart: Mild multifocal areas of inflammatory cell infiltration and mild myocardial fibre degeneration (F1, F4 & F5), several small thrombi (F3).

Gut and pyloric caeca: Epithelial cell sloughing (likely post mortem artefacts) (F1 F5). Some inflammatory cell infiltration noted in the abdominal adipose tissue (F1).

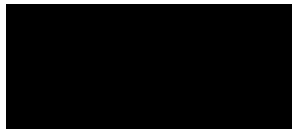
Pancreas: Within normal range.

Liver: Mild multifocal inflammatory cell infiltration and hepatic necrosis (F2, F3) and some apoptotic cells (F2).

Kidney: Within normal range.

Spleen: Mild splenic necrosis (F1).

Signed:



Fish Health Inspector

Date: 25/07/2019

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BUSINESS No FB0169
SITE No FS1304
INSPECTOR [REDACTED]

DATE OF VISIT 27/06/2019
SITE NAME Maragay Mor
CASE No 20190304

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All epidemiological units were inspected. Samples were taken for diagnostic purposes. A separate report will be issued detailing the results of these tests.

Records

Aquaculture animal and aquaculture animal product movement records were inspected and appeared to be adequately maintained.

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Inspection under the Aquaculture and Fisheries (Scotland) Act 2007

The site was also inspected in accordance with the Aquaculture and Fisheries (Scotland) Act 2007, as amended, with respect to section 3 regarding parasites (sea lice).

On this occasion recommendations were issued in relation to parasites (sea lice):

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Please contact myself or the duty inspector should you require any further information or have any queries regarding this report.

Signed:

A black rectangular box redacting the signature of the Fish Health Inspector.

Date: 24/07/2019

Fish Health Inspector

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BUSINESS No	FB0169	DATE OF VISIT	27/06/2019
SITE No	FS1304	SITE NAME	Maragay Mor
INSPECTOR	[REDACTED]	CASE No	20190304

Case completion report

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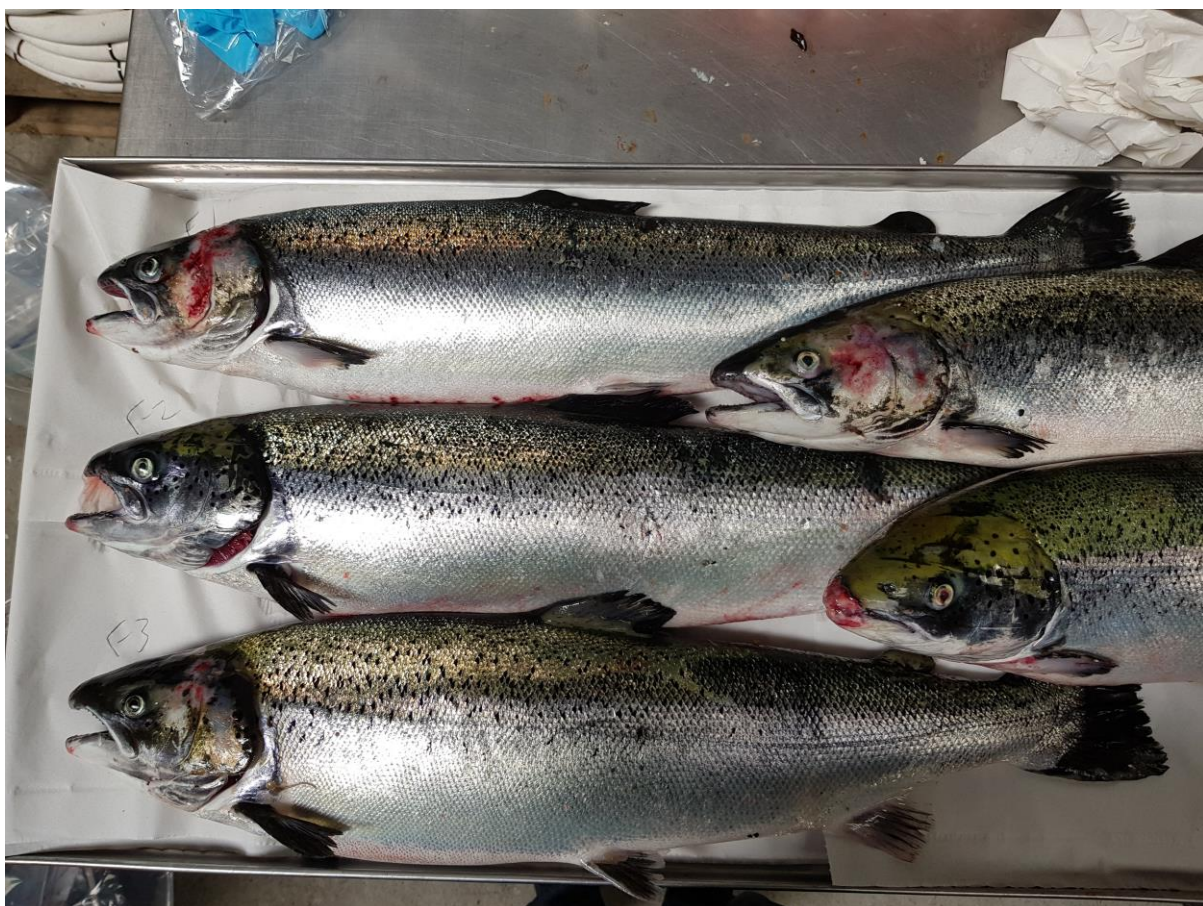
Signed:

[REDACTED]

Date: 16/09/2019

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F1, F2, F3



F4 – F5



F1



F2



F3



F3 – Heart



F4



F5